



January 6, 2015

Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Subject: DOCKET 192B – Towantic Energy, LLC Motion to Reopen and Modify the June 23, 1999 Certificate of Environmental Compatibility and Public Need based on changed conditions pursuant to Connecticut General Statutes §4-181 a(b) for the construction, maintenance and operation of a 785 MW dual-fuel combined cycle electric generating facility located north of the Prokop Road and Towantic Hill Road intersection in the Town of Oxford, Connecticut.

Dear Members of the Siting Council:

The Pomperaug River Watershed Coalition (“PRWC”) appreciates the opportunity given to us by the Siting Council to participate as a Party in the subject docket. Please accept the following as PRWC’s Pre-Filed Testimony that we hope will further an understanding of water supply considerations to the Siting Council and those participating in the docket as to the significance that water resource issues have in determining the viability of the project.

Testimony Overview

While PRWC recognizes the importance of numerous other environmental considerations that the Siting Council will study as it reviews the revised project application from CPV Towantic, LLC (“Towantic”) and the comments provided by others, our testimony is specific to the protection of the water resources within the Pomperaug River watershed. Using science and research, often in collaboration with others, we have gained an insightful “tool box” of knowledge specific to those water resources. It is therefore most appropriate that we focus our remarks on what we know best and endeavor to communicate that information to the Siting Council.

PRWC has reviewed much of the historical project data together with the current submittals provided to the Siting Council by Towantic. We wish to recognize both Towantic and the Heritage Village Water Company (“HVWC”) for the time afforded us to meet with them as we pursued our understanding of the changes made relevant to projected water demands since the Decision and Order was issued by the Siting Council in 1999 for the former Docket 192.

While we applaud Towantic for changes in technology that reduce average day water demands from those represented in the prior design, there remain concerns with the new application that, if left unaddressed, threaten not only river aquatic health but the health and safety of the public water supply in the Pomperaug River watershed. PRWC's testimony will highlight these issues and provide potential action items for Siting Council consideration.

PRWC Background

PRWC is a 501c3 organization that was founded in 1999 in response to the increasing pressures that land development activities threatened to put on the local water supply. Since then, PRWC has evolved into a nationally recognized model for scientific investigation, municipal assistance, stakeholder collaboration, community education, and volunteer engagement. Today, PRWC's mission is to ensure the availability of high quality water in the Pomperaug Watershed communities through the use of science and education. We share our knowledge and expertise with others committed to the protection of water resources for future generations.

PRWC accomplishes its mission by employing the latest science to advance best management of the watershed and by creating a partnership of local governments, businesses, private individuals, scientists and environmental groups who work collaboratively with regional, state, and federal agencies to protect the health and vibrancy of the Pomperaug Watershed. In addition to its research and collaborative activities, PRWC develops practical water management tools for the use of municipalities, offers an online resource center (www.pomperaug.org) for residents and other stakeholders, advises and works with other watershed and environmental organizations, engages numerous volunteers in citizen science projects and conducts classroom and field-based educational activities for children and youth.

PRWC believes that developing good water-use habits and making decisions affecting the long-term health of our local water resources should be grounded in scientific understanding of the watershed. PRWC's programs and services include: development and acquisition of scientific watershed and river data; provision of technical assistance on environmental challenges; and facilitation of educational programs to involve children, residents, businesses, and town officials with their rivers and aquifer. The major objective for all of PRWC's programs and activities is to underscore our collective roles as stewards of our environment and to promote good habits to keep our watershed and rivers healthy.

Historical Synopsis

As previously noted, PRWC participated as a Party in the former Docket 192 proceedings. During that proceeding, PRWC voiced its concerns and provided supporting evidence regarding the impact of aquatic river health and public water supply for then water demands of the project. In its "Opinion" issued on June 23, 1999 the Siting Council stated:

"The Council is concerned with the long-term allocation of water from the Pomperaug River drainage basin and the quality of the State's aquatic ecosystems."

PRWC had requested that the applicant (then Towantic Energy) fund two river stream gages as well as funding an Instream Flow Incremental Methodology ("IFIM") Study. The Siting Council recognized the IFIM Study as "...the model of choice by the DEP and U.S. Fish and Wildlife Service to examine the relationship between stream channel geology and biological factors to various stream flows." In its Opinion, the Siting Council went on to say: "The Council believes that this river basin could be over used if not carefully measured and regulated, and will order that Towantic Energy develop a plan to use on-site water storage for facility operation during low flow conditions or whenever determined necessary by local and/or HWC officials to protect water quality and quantity, to fund a study using IFIM, and to participate in the implementation of the IFIM study prior to commencement of commercial operations to ensure that quality and quantity of water is not affected by the facility." In its June 23, 1999 "Decision and Order" the Siting Council affirmed what it offered in its Opinion.

PRWC had also underscored the importance of future alternative or supplemental water sources, specifically interconnecting water systems. Interconnections can be used to meet critical water demands or more regularly offset the use of water being drawn from the Pomperaug aquifer and transferred outside of the Pomperaug basin (as would be the case with the water demands for this project). HVWC successfully completed an interconnection in Middlebury with the Connecticut Water Company ("CWC"). It is our understanding that the agreement required a diversion permit and allows for 500,000 gallons per day ("gpd") and expires in 2020.

In the years following the 1999 Decision and Order, Towantic Energy and/or its successors have funded the operation of two upland watershed stream gages through a business relationship with the Town of Woodbury and USGS. These gages have proven to be extremely useful in understanding river flows. Today, data continues to be collected and monitored by USGS and is a tool for PRWC research. IFIM funding was not provided by Towantic Energy and/or its

successors. In a 2006 letter to PRWC, GE Commercial Finance (believed to be a successor to Towantic Energy) stated: “in the event GE EFS proceeds with the Project, the project will be required to abide by the Decision and Order issued by the CSC and make the payments described below.” Those payments included funding the IFIM Study at cost of \$300,000.00 (\$15,000.00 per year for twenty years).

In 2007, PRWC, with funding from other sources, completed an IFIM Study of the watershed in collaboration with the University of Massachusetts through its Northeast Instream Habitat Program. The report is titled: “*Assessment and Restoration of Instream Habitat for the Pomperaug, Nonnewaug and Weekepeemee Rivers of Connecticut*”. In 2010, USGS prepared a report in cooperation with PRWC titled: “*Estimation of the Effects of Land Use and Groundwater Withdrawals on Streamflow for the Pomperaug River, Connecticut.*” While there has been additional research conducted by PRWC within the Pomperaug River Watershed, these two reports are believed to be the most significant in helping to reframe the water resources concerns associated with the Towantic revised project proposal. Both of these reports were noted in PRWC’s Pre-Hearing Submittal to the Siting Council dated December 22, 2014. Electronic links to these documents were provided.

In addition to the aforementioned reports, PRWC has reviewed information found within the 2009 HVWC Water Supply Plan. As noted in response to Interrogatory Question CSC-14, the Connecticut Department of Public Health has reviewed and provided comments on HVWC’s plan, but has not approved it. A new plan will be required to be submitted by December 31, 2015. Information found within the plan will be cited within PRWC’s comments that follow.

Findings Relevant to the Current Application

PRWC’s findings are presented to the Siting Council under the heading of the following documents and reports:

1. Towantic Report – “*Environmental Overview in Support of Petition for Changed Conditions*”

Towantic’s current application lacks sufficient detail associated with the issue of water demands and the impact on water resources both in regard to aquatic health and public water supply protection. In Towantic’s report titled: “*Environmental Overview in Support of Petition for Changed Conditions*” (dated October 2014), attention is given to environmental matters such as (1) wastewater discharge, (2) wetlands, (3) site permitting and (4) threatened and endangered species. Documents found within the appendix of the report provide great detail

on these important considerations. In light of the historical information shared above, and the directives from the Siting Council, it would have been anticipated that the protection of water resource would have received close attention and careful planning.

The report adjusts water demands from those in the previous application. Flows now range from 48,816 gpd to 1,025,280 gpd depending on how the plant is fueled and the ambient air temperature. While the lower water demand represents a decrease from the previous application, the instantaneous demands and the ULSD fueled demands have increased. The report states the intent to maintain the limit of withdrawal to 218,000 gpd, reported to be consistent with the last decision. There is limited detail in terms of how that withdrawal will be managed other than a reference to storage and ongoing discussions with HVWC. There is also no specific mention to use of the aforementioned interconnection with CWC and/or other potential water suppliers other than the statement: “... pending discussions with Heritage to determine whether additional supplies can be secured without stressing the permitted safe yield ...” PRWC has filed interrogatories questioning how the large variation in water demands will be met and at what frequency and duration.

2. PRWC Study – *“Assessment and Restoration of Instream Habitat for the Pomperaug, Nonnewaug and Weekepeemee Rivers of Connecticut – Northeast Instream Habitat Program University of Massachusetts”*

The purpose of this study was to evaluate the low-flow related stresses to physical habitat and fish communities, variables which affect the health of that ecosystem, and to determine ecologically viable objectives for a management plan for the Pomperaug River watershed. This is a highly detailed study with the basis of the findings being attributed to the results from an Instream Fisheries Habitat Assessment. The study concluded that the Pomperaug River watershed is a river with “vibrant fish populations” and compared to other watersheds, it represents a high quality stream, with high fish density. At the time of the report (2007), streamflows were only moderately modified by human development and the water temperatures were in the range that would support cold water fauna. However, the report also concludes that “...future increases in water withdrawals and watershed development would dramatically affect catastrophic and persistent low flow conditions in summer.”

The study analyzed six habitat bioperiods for the Pomperaug, Nonnewaug and Weekepeemee Rivers and developed recommended habitat sustaining flows for each bioperiod under three flow conditions: (1) Common Flow, (2) Critical Flow, and (3) Rare Flow. The “Overwintering” bioperiod from December through February requires the highest flows. This is significant in that

the highest water demands for the proposed facility are likely to occur during this bioperiod when the facility is required to operate with ULSD as the fuel. The summer “Rearing & Growth” bioperiod period from July 15 to September 30 also presents potential challenges in that water demands from the facility will be at a time when overall water supply demands on the HVWC system are typically at their highest.

In the case of the Pomperaug River, taking one example, the Critical Flow for the Rearing & Growth Bioperiod is 20 cubic feet per second (“cfs”) with an allowable duration of 15 days. In comparing the Critical Flow threshold with actual monthly mean data from the Pomperaug River USGS flow gage since Towantic’s previous application in 1999, there have been ten months (22% of the time) where the flows were recorded to be below 20 cfs. The most critical period was during the 2010 drought where flows during July through August were all below the Critical Flow.

The complete report is a reliable document to determine the flows required to sustain a viable and healthy aquatic water environment within the Pomperaug River watershed.

3. USGS Study – *“Estimation of the Effects of Land Use and Groundwater Withdrawals on Streamflow for the Pomperaug River, Connecticut”*

This report published by USGS in 2010 details the results of a precipitation runoff model for the Pomperaug River watershed that was developed to address issues of concern including the effect of development on streamflow and groundwater recharge, and the implications of water withdrawals on streamflow. The following excerpts from the document are believed to be relevant to the proposed water withdrawal from the Pomperaug aquifer:

- “The modeling indicated that over the course of a year, groundwater provides between 60 and 70 percent of flow in the Pomperaug River; the remainder is generated by more rapid flow through shallow subsurface and runoff from impermeable surfaces and saturated ground.”
- “Base flow to streams in the Pomperaug River watershed is reduced by both increased impervious surface and increased groundwater withdrawals. For the watershed as a whole, increasing groundwater withdrawals have the potential for causing greater overall reductions in flow compared to increased development and impervious surfaces.”
- “If all registered diversions are used during periods of low flows, there is a risk that portions of the river system will experience low flows below tolerable levels or possibly dry streambeds.”

It can be logically concluded that water withdrawals from the Pomperaug aquifer have a significant impact on river flows and there remains great uncertainty as to the full impact given questions concerning the registered diversions.

The full report provides an explanation of the methodology used by USGS and an analysis of the data collected, together with management scenario applications. The report also identifies the limitations within its findings.

4. HVWC – “2009 Water Supply Plan”

HVWC is a very well-managed and credible organization. They are in fact a key partner in PRWC’s coalition-based approach to Pomperaug River watershed water resource protection and management. PRWC has met with HVWC, reviewed initial findings for the Towantic project, and anticipates continuing the dialog on their ability and limitations for meeting the currently stated water demands for the facility.

The Siting Council is aware that water utility water supply plans are prepared by water utilities for a 50-year planning period. These plans are submitted to the Connecticut Department of Public Health (“DPH”) for review and approval. These plans are insightful in that they provide forecasts for long-term planning including quantifying the ability of a water supplier to meet public water demands and comply with stated safe yields and other parameters.

As noted earlier, HVWC submitted its 2009 Water Supply Plan to DPH and as per docket interrogatory question CSC-14 the DPH has reviewed and provided comments on the plan but has not approved it. A new Water Supply Plan will be filed with DPH by December 31, 2015.

HVWC’s 2009 Water Supply Plan states that: *“There are no know industrial developments within the 5-year planning period. However; the Towantic Energy Plant in Oxford is being accounted for in the 20-year planning period. The amount that has been allocated for the energy plant is 60,000 gpd.”*

The plan also includes the aforementioned interconnection with CWC and provides for the following: *“The interconnection with CWC has been included in the calculations for margin of safety for the 5, 20 and 50-year planning periods.”* A potential connection with the City of Waterbury water system is also mentioned.

The Plan also states that: *“HVWC’s wellfield could sustain its permitted withdrawal rate of 2.05 mgd for a 180 day period with no recharge, and without the Pomperaug River running dry.”*

It is unclear to PRWC how that determination was made. It should also be noted that “running dry” should not be an acceptable parameter. Aquatic health, as demonstrated in the aforementioned Instream Habitat Report is significantly impacted long before the river runs dry. “Running dry” may also impact the ability of the Pomperaug River to successfully accept the discharge from HVWC and other wastewater treatment facilities including numerous subsurface wastewater treatment facilities throughout the watershed.

Opinion and Proposed Action Items

PRWC is of the opinion that while there has been good cooperation and communication with Towantic on matters pertaining to facility water demand and the impact that those demands will have on both the region’s public water supply and the watershed aquatic health, there has been insufficient work completed in the planning stages by Towantic to assure that the Pomperaug River watershed water resources are not significantly adversely impacted. As such, PRWC cannot support at this time the construction of the facility and respectfully requests that the Siting Council defer any approval until a workable resolution is in place to limit water demands from the Pomperaug River aquifer to those that are identified as being non-threatening to human and aquatic health.

To determine whether an acceptable water use plan can be developed, PRWC suggests the following action items:

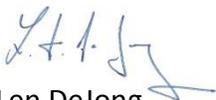
- a) HVWC’s 2009 Water Supply Plan be amended to reflect the change from the current 60,000 gpd allocation to Towantic to reflect HVWC’s current water supply capabilities to Towantic from the Pomperaug aquifer and from interconnects with other water systems. PRWC understands that since the 2009 Water Supply Plan was submitted there may be revised plans that allow HVWC to increase its allocation to Towantic. Existing and proposed interconnects should be determined to be viable for the operating life of the facility as well as proposed new HVWC sources of supply. DPH should review and approve such changes.
- b) Working under the direction of the CT Department of Energy and Environmental Protection (“DEEP”), and in cooperation with HVWC, Towantic should complete a hydrogeological study to evaluate the effects of sustained pumping on the Pomperaug River for those water allocation demands deemed acceptable by DPH. Following its

review of that study, DEEP should provide the Siting Council with its concurrence that those water demands will not adversely impact the Pomperaug River. DEEP may elect to review water allocation for the entire Pomperaug River basin as well as consider its upcoming classification of stream flows as per the newly approved Connecticut Stream Flow Regulations.

- c) Based on the availability of Pomperaug aquifer and interconnecting water supplies together with on-site water storage, Towantic should present a plan for Siting Council approval that clearly demonstrates the ability of Towantic to stay within the required water withdrawal rates for the operating life of the facility. Given the large variability of water usage by fuel types, the plan should take into account variations in fuel consumed (natural gas vs. ULSD) as directed by regulatory authorities or as elected by Towantic.
- d) It is unclear to PRWC if Towantic has investigated air cooled vs. water cooled operation as a means to greatly minimize water demands.
- e) The operation of, and the annual funding provided by Towantic for the aforementioned stream flow gages remain a critical component to water resource management within the Pomperaug watershed. It is requested that funding continue and be sustained for the duration of the operation of the facility if water is to be provided by the Pomperaug River aquifer.

Thank you once again for the opportunity to submit this testimony. PRWC will endeavor to respond to any questions concerning our testimony as quickly as possible with the understanding that those who participated in Pomperaug River watershed research work such as USGS and UMASS may need to be directly called upon.

Sincerely,



Len DeJong
Executive Director

c. Service List

I hereby certify that a copy of the foregoing document was electronically mailed and/or sent by U.S. mail) to the following service list on January 6, 2015.